



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,714	01/05/2004	Wing K. Luk	YOR920030603US1	2257
48062 7590 02/11/2008 RYAN, MASON & LEWIS, LLP 1300 POST ROAD SUITE 205 FAIRFIELD, CT 06824				
EXAMINER				
MONDT, JOHANNES P				
ART UNIT		PAPER NUMBER		
3663				
MAIL DATE		DELIVERY MODE		
02/11/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/751,714

**Applicant(s)**

LUK ET AL.

**Examiner**

JOHANNES P. MONDT

**Art Unit**

3663

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 21-37 is/are pending in the application.
- 4a) Of the above claim(s) 21-23 and 29-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-28, 36 and 37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

Amendment filed 1/29/08 after Final Rejection under 37 C.F.R. 1.116 has been entered. However, examiner regrets that an update search has revealed pertinent art over which the claims have to be rejected. In addition, an objection to the claims and a rejection under 35 U.S.C. 112, second paragraph, are included.

Accordingly, the Finality of the Office Action mailed 10/30/2007 is herewith withdrawn, and a Non-Final Office Action is herewith provided.

### *Claim Objections*

1. **Claims 24-28, 36 and 37** objected to because of the following informalities: Appropriate correction is required. In particular, the text of independent claim 24 has to end with a period.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. **Claims 24-28, 36 and 37, through claim 24**, recite the limitation "the circuit" in lines 12. There is insufficient antecedent basis for this limitation in the claim.
4. **Claim 25** is objected to for the following informality: the wording "wherein the control voltage applied" (line 1) should be replaced by: "wherein the control voltage is applied".

5. **Claims 27 and 28** are objected to for the following informalities: in both claims the wording “of the isolation device of the isolation device” should be replaced by: “of the isolation device”.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 24-28, 36 and 37** are rejected under 35 U.S.C. 102(b) as being anticipated by Folmsbee (5,386,151).

N.B.: the rejection is provided subject to the noted indefiniteness under 35 U.S.C. 112, second paragraph, assuming that the recited “an output of the circuit” is “an output of said method of amplifying”.

*Folmsbee teaches* as prior art (Figure 1A and col. 4, l. 1-65) a method for amplifying signals (“Description of the Preferred Embodiment”, col. 1, l. 29-32 and col. 3, l. 57-67), the method comprising:

determining that a voltage on a signal line (signal line from VDD to node 125) is to be amplified;

modifying voltage on a control line  $\phi'$  (providing clock input  $\phi'$  under gate of MOS capacitor 130) (col. 4, l. 1-33), wherein the control line is coupled to a second terminal (source-drain terminal) of a two-terminal semiconductor device (MOS capacitor 130) (Fig. 1A and loc.cit.), the two-terminal device having said

second terminal and a first terminal (gate), the first terminal coupled to the signal line (Fig. 1A and loc.cit.) , the second terminal coupled to the control line (see above), wherein the two terminal semiconductor device is adapted to have a capacitance when a voltage on the first terminal is in a first voltage range and to have a lower capacitance when a voltage on the first terminal (gate) is in a second voltage range (inherently so because the MOS capacitor's conductive channel width and conductivity depends thus on gate voltage), wherein said first and second voltage ranges are defined by a threshold voltage (inherently so, for the formation of a conductive channel is characterized by a threshold voltage), and wherein the control line is adapted to be coupled to a control signal (clock signal  $\phi'$ ) and wherein the signal line is adapted to be coupled to a signal and to be an output VOUT of the circuit (through 140); and

wherein an isolation device (NMOS transistor 110) is intermediate the signal line and the two-terminal semiconductor device, the isolation device having an input, an output and a control terminal (gate of NMOS transistor 110), the input of the isolation device coupled to the signal line (at node 125) and the output of the isolation device coupled to the first terminal 130 (through node 135), wherein the output of the isolation device is adapted to be output of "the" circuit, interpreted to be "output of the amplifier", and wherein the method further comprises the step of applying a control voltage to the control terminal of the isolation device (a gate voltage is inherently applied to the NMOS transistor's gate when is use), the control voltage being greater than a threshold voltage of

the isolation device (as otherwise the isolation device would be a perfect and permanent insulator while no voltage would be communicated).

*On claim 25:* the limitation is met because the "expected" voltage for a signal coupled to the input of the isolation device is the voltage at node 125, which is added to the voltage on the gate of NMOS transistor 110, i.e., the isolation device (see col. 4, l. 34-40), the gate thereof being in series with said node 125, and the clock input  $\phi$  in a high state adding to the pre-charge voltage at 125 the clock swing of clock input  $\phi$ .

*On claim 26:* the isolation device comprises a Field Effect Transistor (FET), in particular: a NMOS Field Effect Transistor or NMOSFET (loc.cit.), which is adapted to be turned on when the voltage on the signal line is below a predetermined value (because the source-drain voltage, for any given voltage on either drain or source, in a neighborhood of  $-\infty$  for either source or drain, respectively, conducts because of the finite value of the turn-ON threshold of said isolation device, and is adapted to be turned off when voltage on the first terminal of the two-terminal semiconductor device is above a predetermined value, because for any given voltage at node 125 said isolation device is on in a neighborhood of  $\infty$  and is turned off when the voltage at node 135 crosses the turn-OFF threshold (col. 4, l. 34-48)

*On claims 27-28:* the control terminal of the FET is the gate of the FET (110) and the step of applying a control voltage to the control terminal of the isolation device comprises the step of applying a voltage above and below a threshold voltage to the gate of the FET through clock-input control  $\phi$ . (col. 4, l. 41-43).

*On claim 36:* the step of generating the control voltage further comprises the step of generating the control voltage by using at least a reference voltage (Ground, to which substrate of MOS capacitor 120 is connected) and the control voltage (through clock input  $\phi$ ) (Figure 1A for grounding, as well as col. 4, l. 1-20).

*On claim 37:* the step of generating the reference voltage comprises the step of using a ground voltage (loc.cit.).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHANNES P. MONDT whose telephone number is (571)272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3663

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Johannes P Mondt/  
Primary Examiner, Art Unit 3663